FIG.1

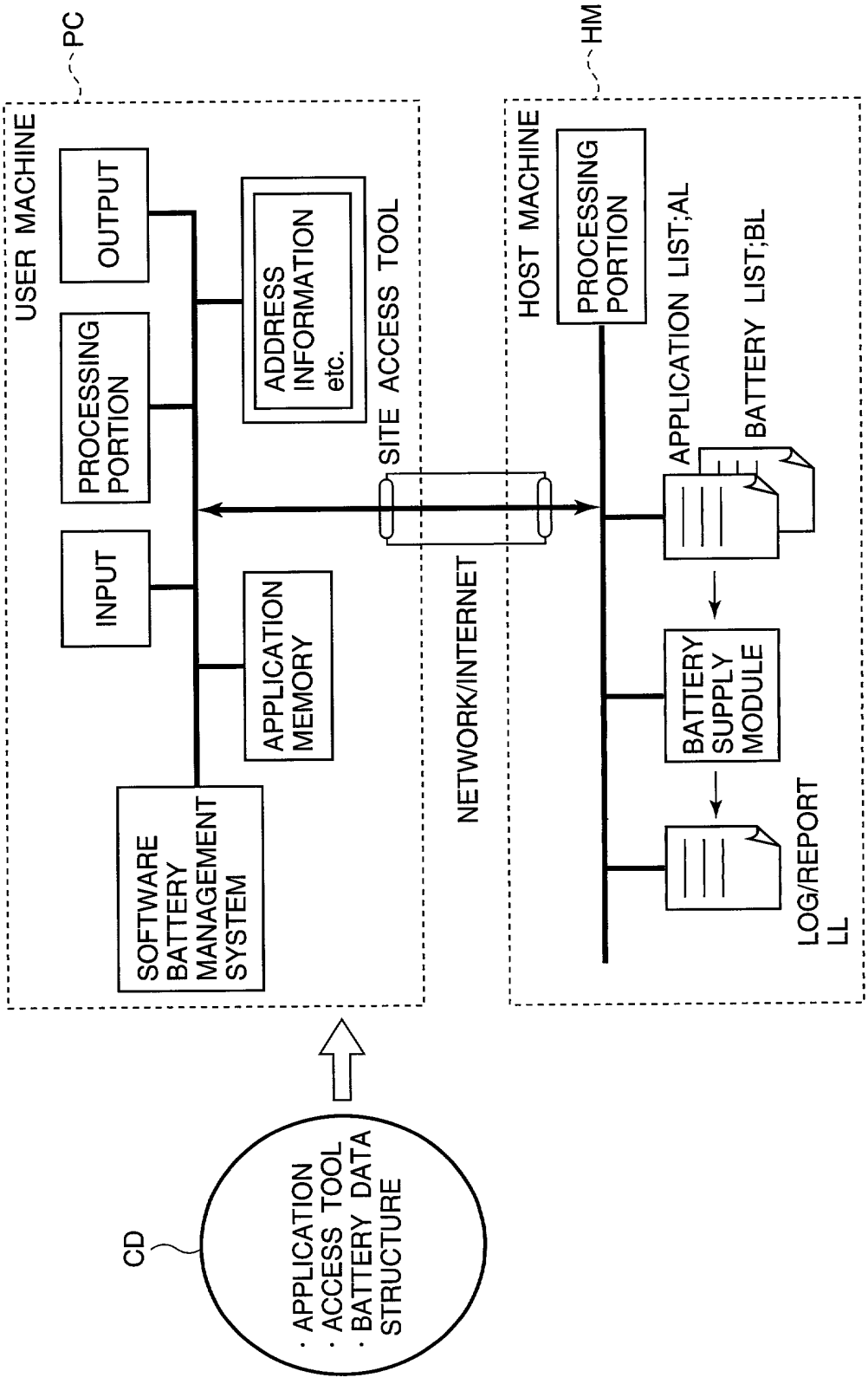

PC
USER MACHINE
OUTPUT
PROCESSING PORTION
ADDRESS INFORMATION etc.
INPUT
APPLICATION MEMORY
SOFTWARE BATTERY MANAGEMENT SYSTEM
SITE ACCESS TOOL
NETWORK/INTERNET
HM
HOST MACHINE
PROCESSING PORTION
APPLICATION LIST;AL
BATTERY LIST;BL
BATTERY SUPPLY MODULE
LOG/REPORT LL
CD
· APPLICATION
· ACCESS TOOL
· BATTERY DATA STRUCTURE

FIG.2

APPLICATION LIST;AL

APPLICATION ID	APPLICATION NAME	BATTERY ID	VALID/INVALID

BATTERY LIST;BL

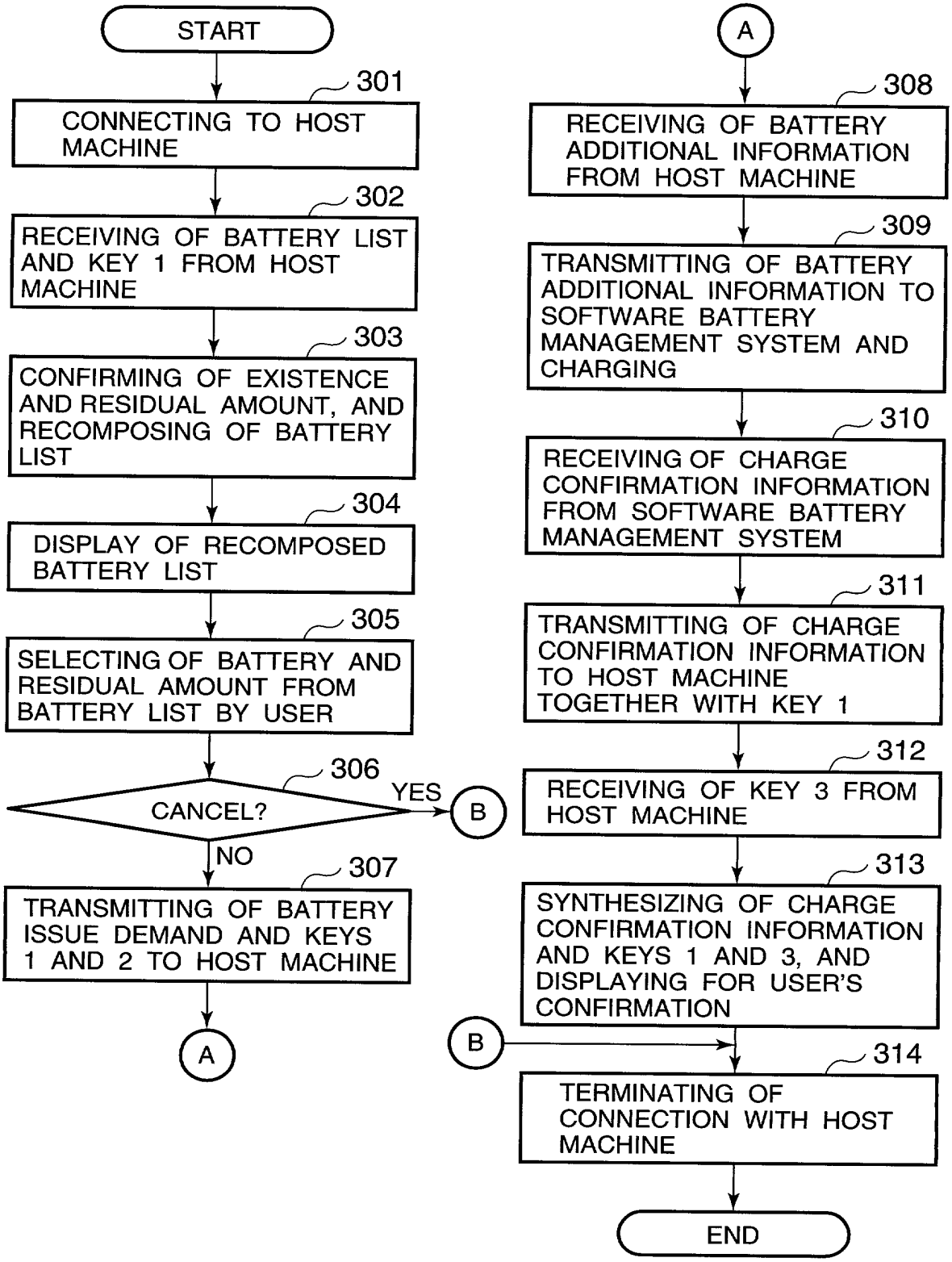
BATTERY ID	RIGHTFUL PERSON ID	BATTERY SUPPLY UNIT	BATTERY UNIT PRICE

BATTERY SUPPLY HISTORY;BH

DATE AND TIME	KEY 1	KEY 3	APPLICATION ID	BATTERY ID	SUPPLY AMOUNT

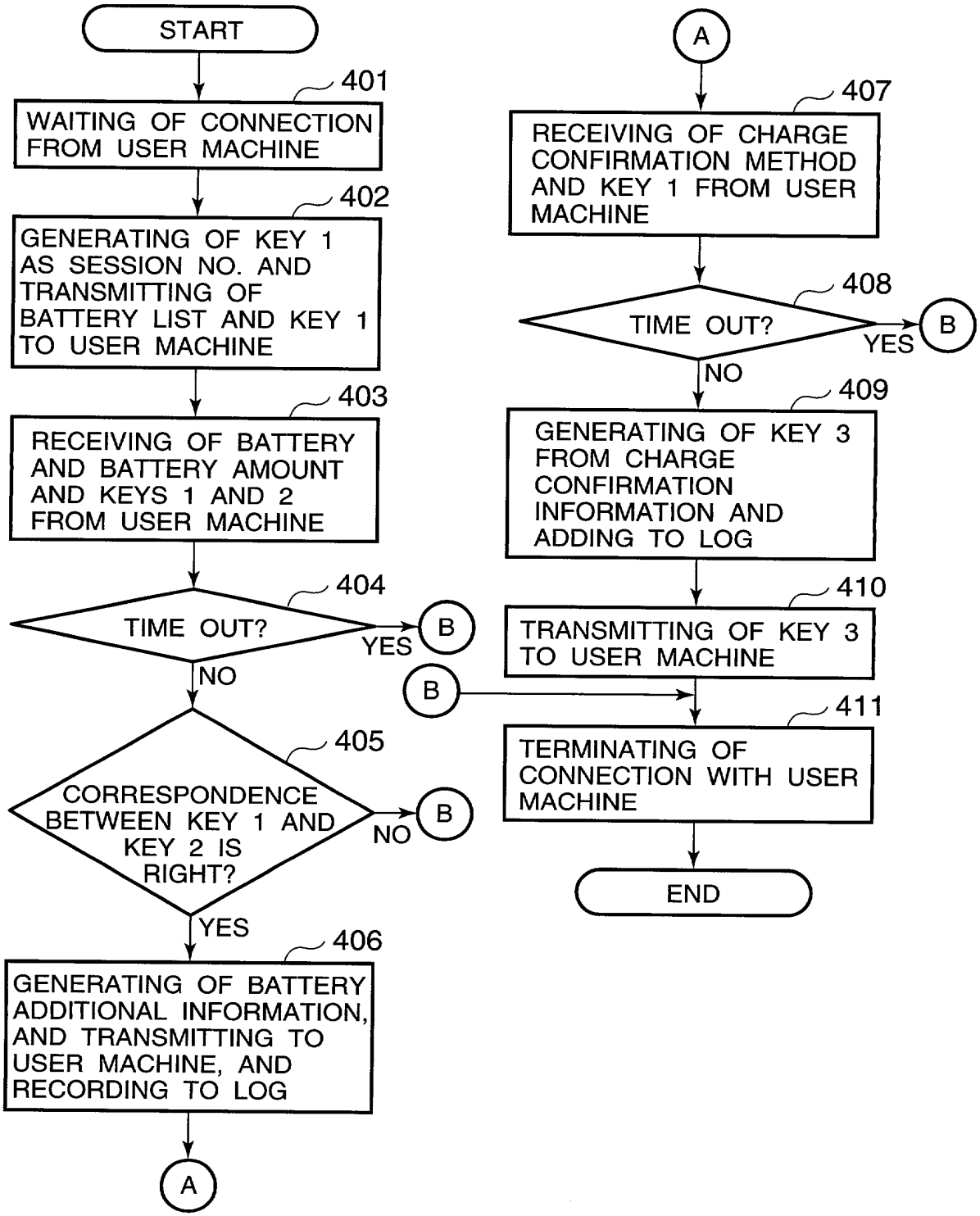
KEY 1 CAN BE USED FOR IDENTIFYING USER

FIG.3



EP 0 955 694 A2

FIG.4



US 2005/0154701 A1

FIG.5

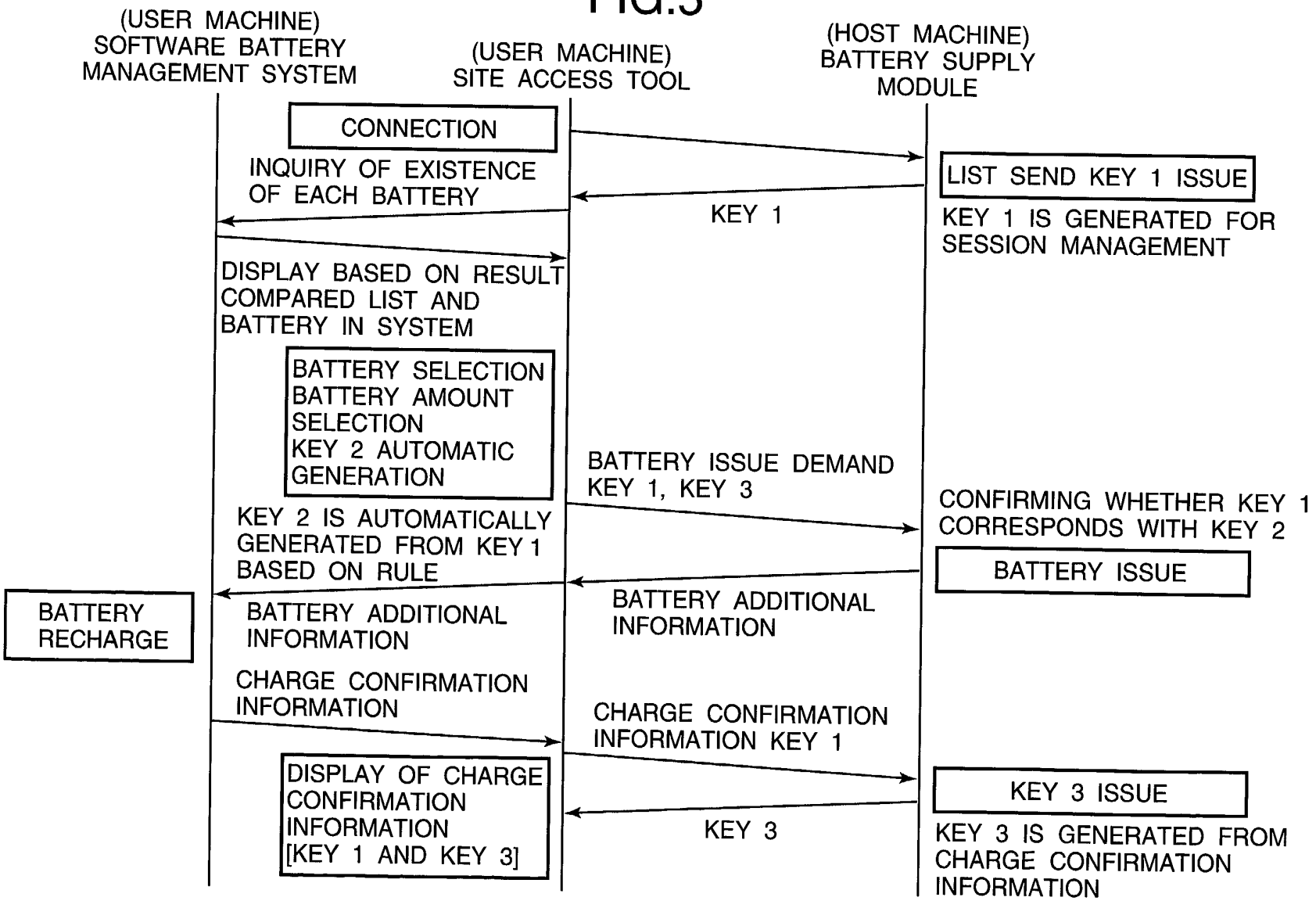
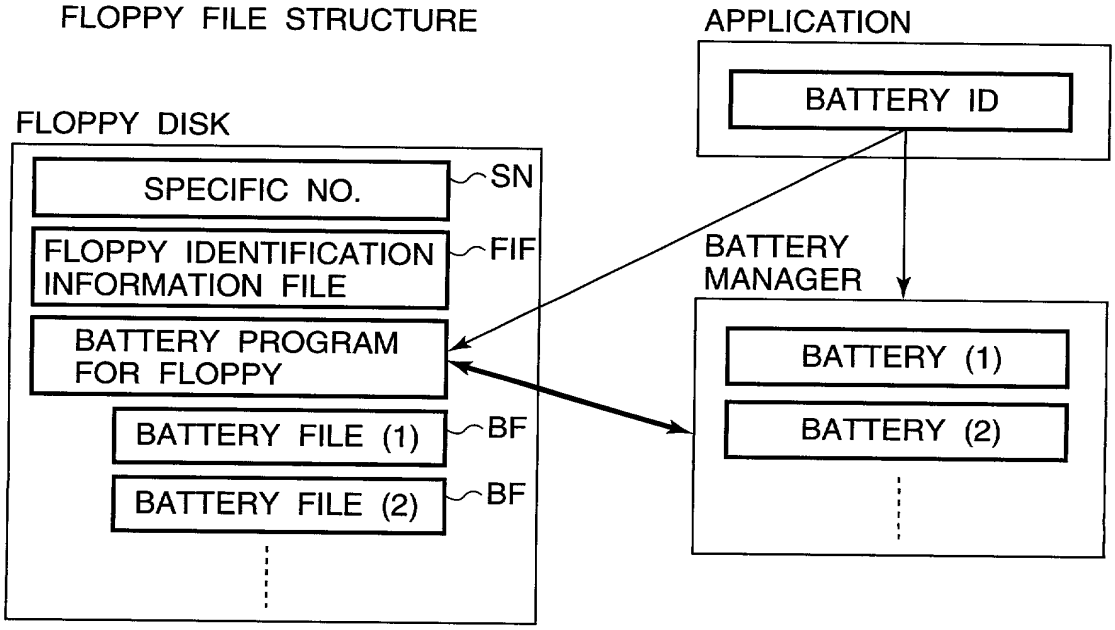

(USER MACHINE)
SOFTWARE BATTERY
MANAGEMENT SYSTEM
(USER MACHINE)
SITE ACCESS TOOL
(HOST MACHINE)
BATTERY SUPPLY
MODULE
CONNECTION
INQUIRY OF EXISTENCE
OF EACH BATTERY
LIST SEND KEY 1 ISSUE
KEY 1
KEY 1 IS GENERATED FOR
SESSION MANAGEMENT
DISPLAY BASED ON RESULT
COMPARED LIST AND
BATTERY IN SYSTEM
BATTERY SELECTION
BATTERY AMOUNT
SELECTION
KEY 2 AUTOMATIC
GENERATION
BATTERY ISSUE DEMAND
KEY 1, KEY 3
CONFIRMING WHETHER KEY 1
CORRESPONDS WITH KEY 2
KEY 2 IS AUTOMATICALLY
GENERATED FROM KEY 1
BASED ON RULE
BATTERY ISSUE
BATTERY
RECHARGE
BATTERY ADDITIONAL
INFORMATION
BATTERY ADDITIONAL
INFORMATION
CHARGE CONFIRMATION
INFORMATION
CHARGE CONFIRMATION
INFORMATION KEY 1
DISPLAY OF CHARGE
CONFIRMATION
INFORMATION
[KEY 1 AND KEY 3]
KEY 3 ISSUE
KEY 3
KEY 3 IS GENERATED FROM
CHARGE CONFIRMATION
INFORMATION

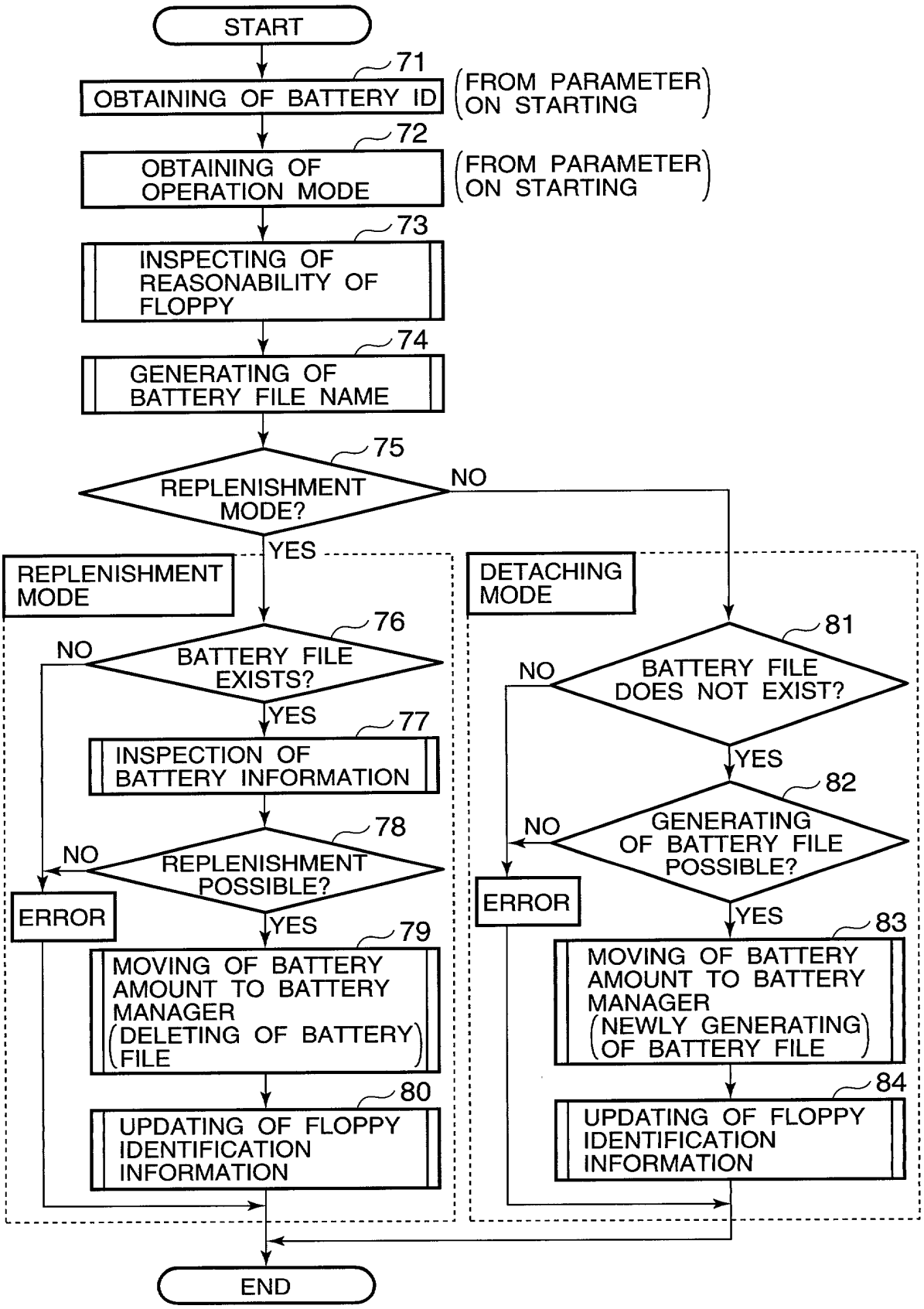
FIG.6



0050304-0054504

OPERATION SUMMARY OF BATTERY PROGRAM FOR FLOPPY

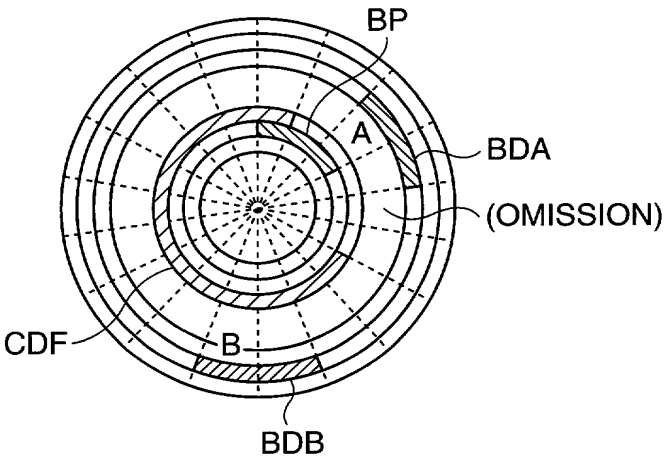
FIG.7



0853694-053450

FIG.8

BATTERY SPECIAL FD



BATTERY MANAGEMENT DATA FORMAT

FLOPPY SERIAL NO.
DATE AND TIME INFORMATION OF LAST OPERATION
BATTERY ID OF LAST OPERATION
BATTERY SUMMARY OF LAST OPERATION *1

*1:NUMERICAL DATA SUCH AS "CHECK SUM" FOR CHECKING WHETHER BATTERY DATA IS INTERPOLATED

BATTERY DATA FORMAT

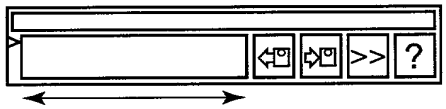
BATTERY TYPE IDENTIFICATION INFORMATION *2
BATTERY CAPACITY (INTEGER) *2
CHARGING ACCEPTANCE DISCRIMINATION FLAG
DETACHING ACCEPTANCE DISCRIMINATION FLAG
PREDICTION VALUE OF REMAINING USE TIME/TIMES

*2:HAVING BATTERY TYPE AND CAPACITY COLLECTIVELY IN ONE NUMERAL VALUE IS ALSO POSSIBLE

0050504-0504201

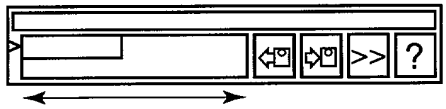
FIG.9

(1)



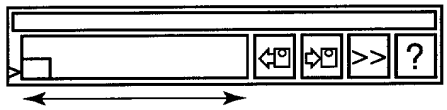
BATTERY CAPACITY
DISPLAY AREA

(2)



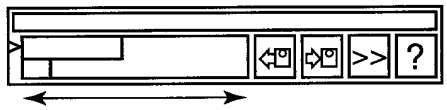
BATTERY CAPACITY
DISPLAY AREA

(3)



BATTERY CAPACITY
DISPLAY AREA

(4)



BATTERY CAPACITY
DISPLAY AREA

(5)

〈BATTERY MOUNTING SITUATION〉

TYPE	PRESENCE/ ABSENCE	RESIDUAL	PRESUNED REMAINING TIME	PROCESSING	
TRIAL	PRESENCE	10UNIT	××MINUTES	CHARGING	DETACHING
NORMAL	PRESENCE	100UNIT	××MINUTES	CHARGING	DETACHING
UNLIMITED	ABSENCE	—	—	CHARGING	DETACHING

〈CONSUMPTION ORDER〉
IT IS CONSUMED FROM NORMAL BATTERY
☐PREPARING OF USE HISTORY FILE

DELETE USE HISTORY FILE | CLOSE | HELP

(6)

GRAPHIC DISPLAY TEXT DISPLAY
NON-DISPLAY

FIG.10

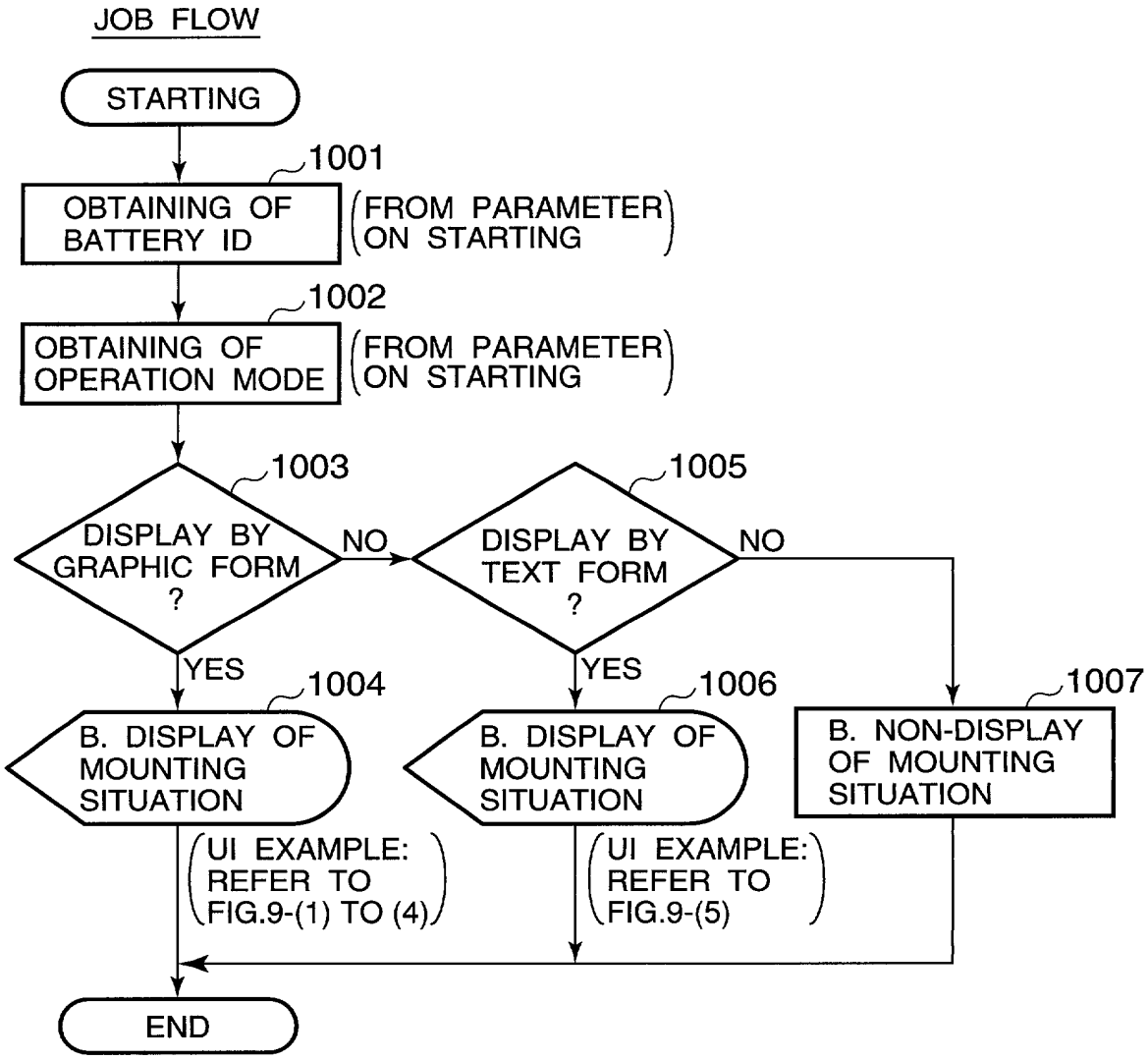

JOB FLOW
STARTING
1001
OBTAINING OF BATTERY ID
(FROM PARAMETER ON STARTING)
1002
OBTAINING OF OPERATION MODE
(FROM PARAMETER ON STARTING)
1003
DISPLAY BY GRAPHIC FORM ?
NO
1005
DISPLAY BY TEXT FORM ?
NO
YES
YES
1004
B. DISPLAY OF MOUNTING SITUATION
1006
B. DISPLAY OF MOUNTING SITUATION
1007
B. NON-DISPLAY OF MOUNTING SITUATION
(UI EXAMPLE: REFER TO FIG.9-(1) TO (4))
(UI EXAMPLE: REFER TO FIG.9-(5))
END

FIG.11

SCREEN DISPLAY EXAMPLE 1

(1)

PREDICTION DISPLAY SCREEN

〈BATTERY MOUNTING SITUATION〉

TYPE	PRESENCE/ ABSENCE	RESIDUAL	PRESUMED REMAINING TIME	PROCESSING	
TRIAL	PRESENCE	10UNIT	××MINUTES	CHARGING	DETACHING
NORMAL	PRESENCE	100UNIT	××MINUTES	CHARGING	DETACHING
UNLIMITED	ABSENCE	—	—	CHARGING	DETACHING

〈CONSUMPTION ORDER〉
IT IS CONSUMED FROM NORMAL BATTERY
☐PREPARING OF USE HISTORY FILE

DELETE USE HISTORY FILE | CLOSE | HELP

(2)

RESIDUAL WARNING DISPLAY SCREEN

i

BATTERY PRESENT IN USE BECOMES IMPOSSIBLE TO USE,
IF ×× TIMES(×× MINUTES)
USE IS CARRIED OUT !

CLOSE | HELP

DATA FORMAT IN BATTERY

BATTERY TYPE IDENTIFICATION INFORMATION *2
BATTERY CAPACITY (INTEGER) *2
CHARGING ACCEPTANCE DISCRIMINATION FLAG
DETACHING ACCEPTANCE DISCRIMINATION FLAG
CALCULATION RESULT OF REMAINING USE TIME/TIMES *3

*2:HAVING BATTERY TYPE AND CAPACITY COLLECTIVELY IN ONE NUMERAL VALUE IS ALSO POSSIBLE

*3:CALCULATING・UPDATING BASED ON TOTAL FILE OF USE HISTORY/ INFORMATION ACCUMULATED IN MAIN PART

USE HISTORY INFORMATION ACCUMULATED IN SYSTEM

〈DETAILED DATA FILE〉

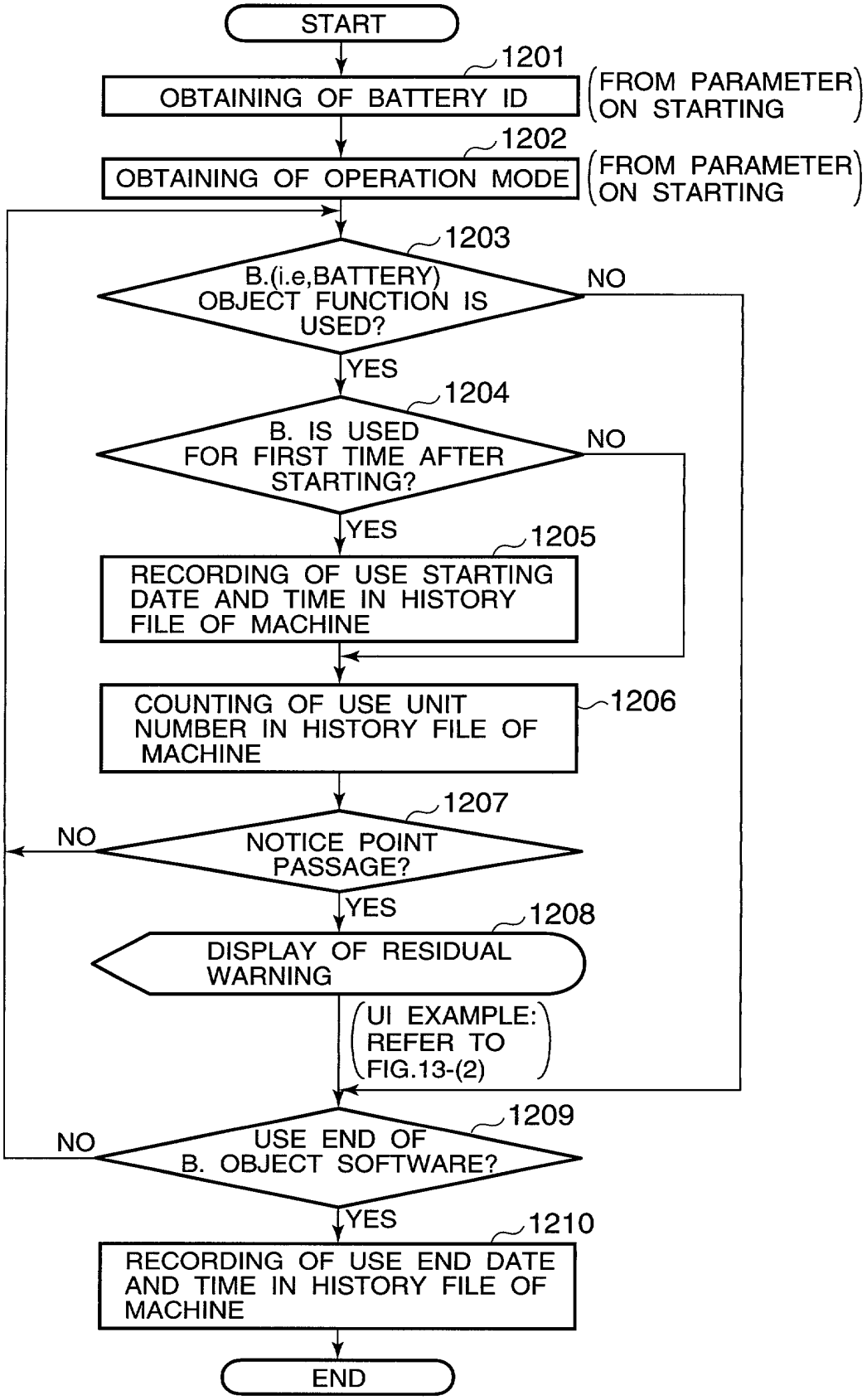
BATTERY ID
DATE AND TIME OF USE START
DATE AND TIME OF SOFTWARE USE END
USE TIME
USE UNIT NUMBER

〈TOTAL DATA FILE〉

BATTERY ID
ACCUMULATION USE TIME
ACCUMULATION USE UNIT NUMBER

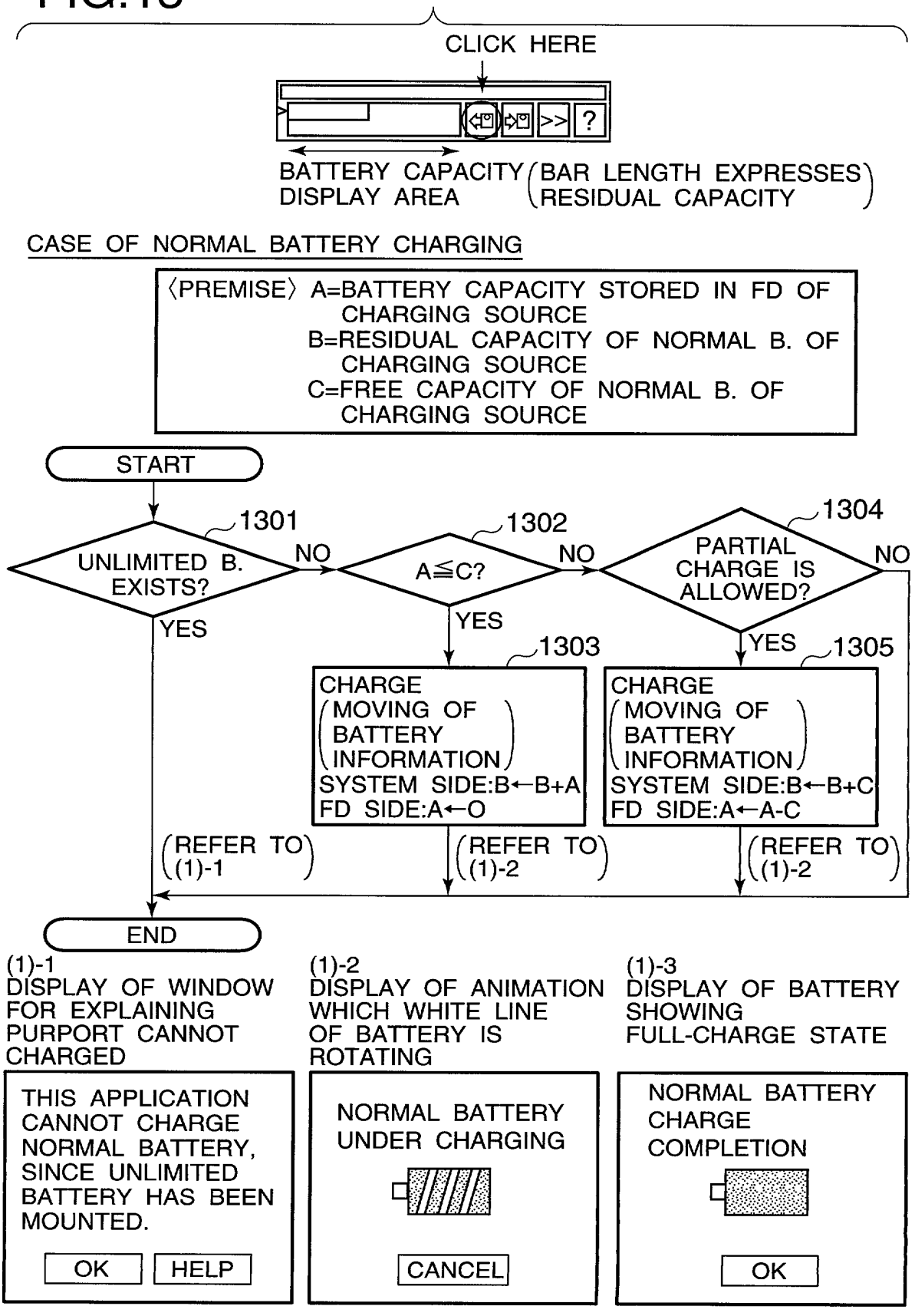
0035804 - 0504 EP

FIG.12 FUNCTION FOR PREDICTING TIME/TIMES CAN BE USED FROM BATTERY RESIDUAL AMOUNT



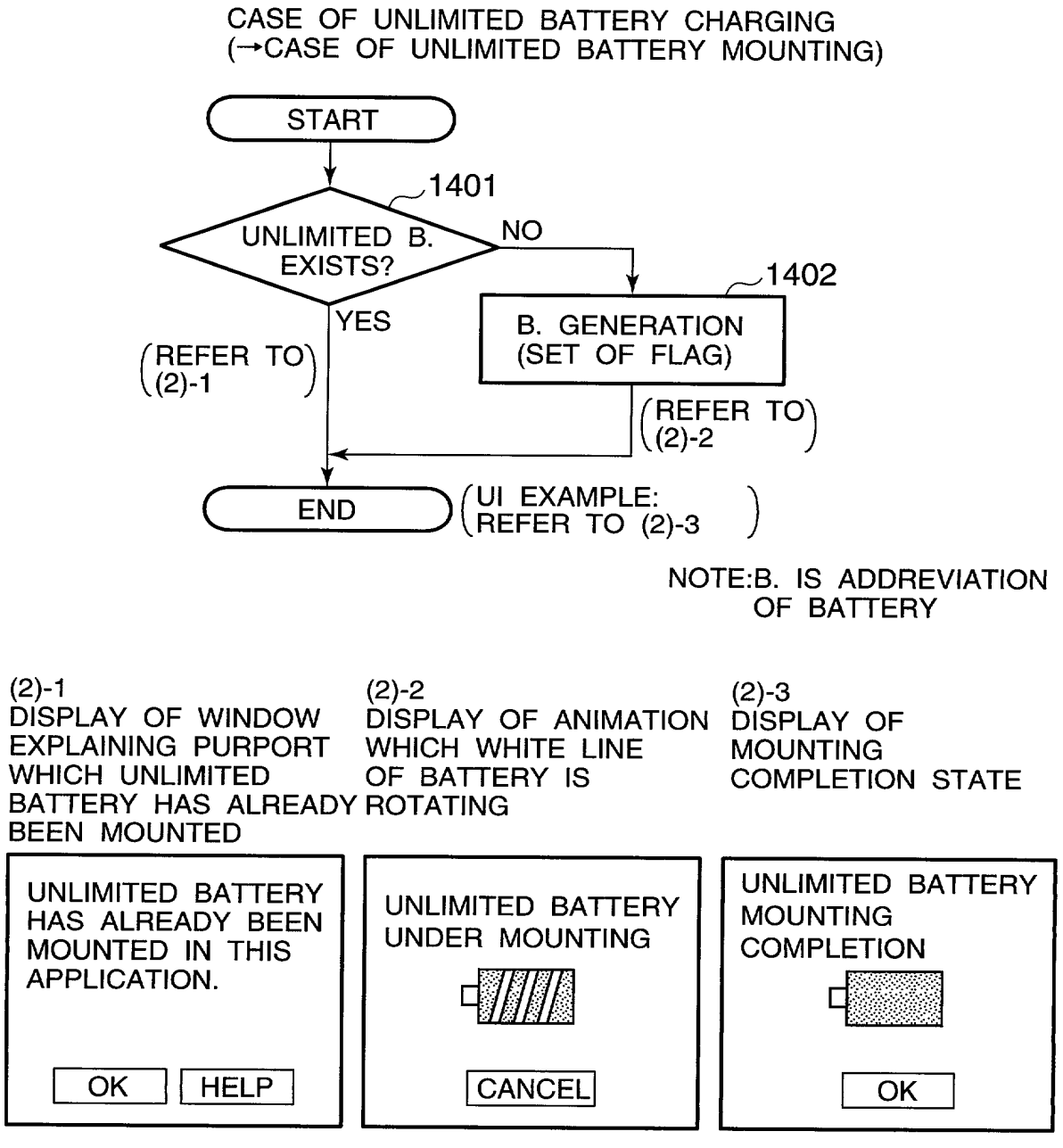
EP1754054A1

FIG.13



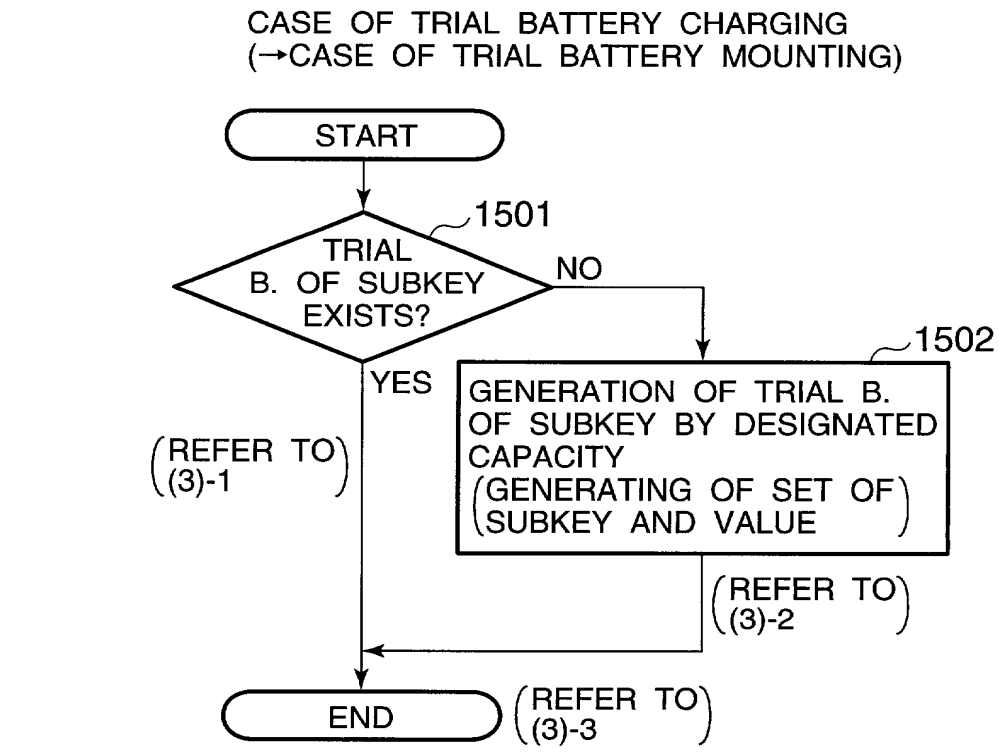
0053004-0054004

FIG.14

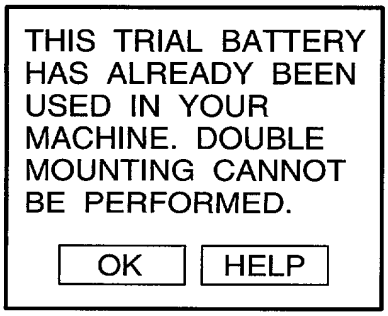


JP2004-056450-A

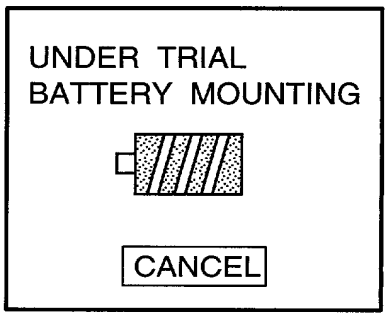
FIG.15



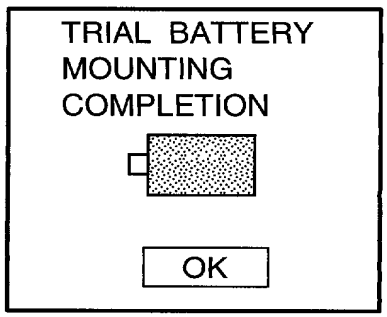
(3)-1
DISPLAY OF WINDOW EXPLAINING PURPORT WHICH TRIAL BATTERY OF SUBKEY HAS ALREADY BEEN MOUNTED



(3)-2
DISPLAY OF ANIMATION WHICH WHITE LINE OF BATTERY IS ROTATING



(3)-3
DISPLAY OF MOUNTING COMPLETION STATE



0985984-0054100

FIG.16

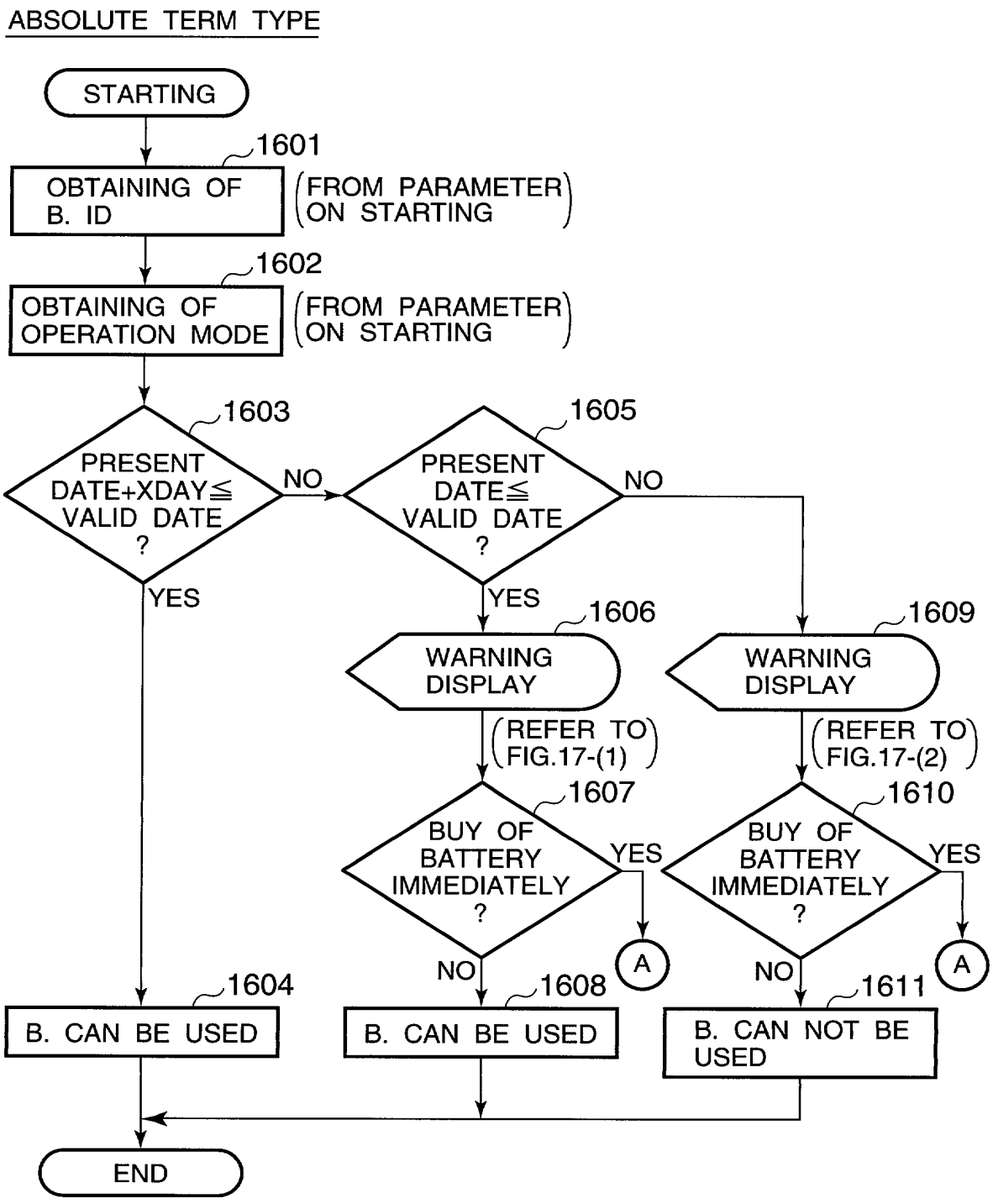
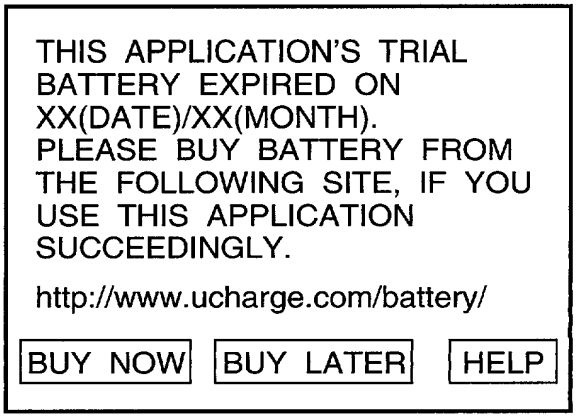

ABSOLUTE TERM TYPE
STARTING
1601
OBTAINING OF B. ID
(FROM PARAMETER ON STARTING)
1602
OBTAINING OF OPERATION MODE
(FROM PARAMETER ON STARTING)
1603
PRESENT DATE+XDAY≦ VALID DATE ?
NO
1605
PRESENT DATE≦ VALID DATE ?
NO
YES
YES
1606
WARNING DISPLAY
1609
WARNING DISPLAY
(REFER TO FIG.17-(1))
(REFER TO FIG.17-(2))
1607
BUY OF BATTERY IMMEDIATELY ?
YES
1610
BUY OF BATTERY IMMEDIATELY ?
YES
A
A
NO
NO
1604
B. CAN BE USED
1608
B. CAN BE USED
1611
B. CAN NOT BE USED
END

FIG.17

(1)
DISPLAY OF WARNING MESSAGE FROM X DAYS BEFORE OF VALID DATE TO THAT DATE

(2)
DISPLAY OF WARNING MESSAGE AFTER PROGRESS OF VALID DATE



0505305 A1 -2005-03-31

FIG.18

(2) TERM LIMITATION TYPE

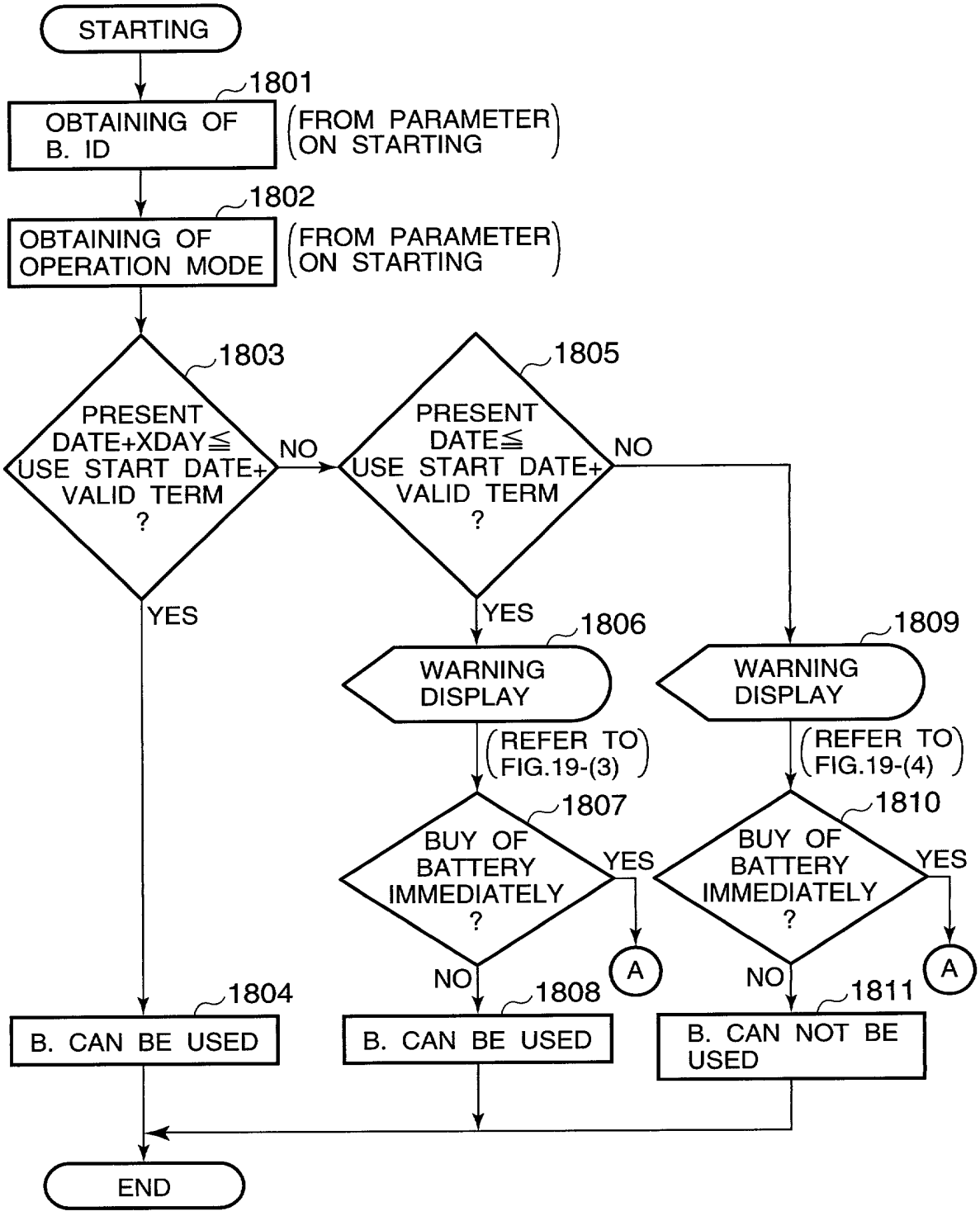
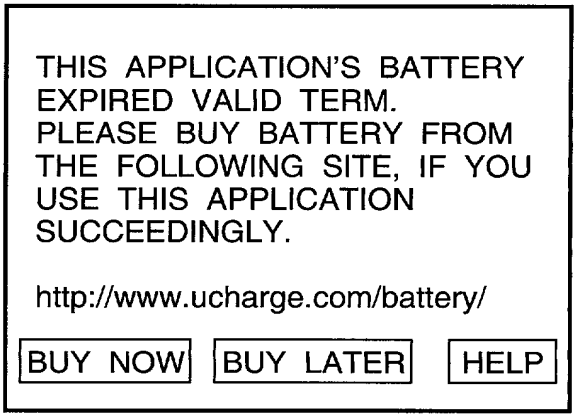


FIG.19

(3)
DISPLAY OF WARNING MESSAGE FROM X DAYS BEFORE VALID TERM TO LAST DATE OF VALID TERM

(4)
DISPLAY OF WARNING MESSAGE AFTER PROGRESS OF VALID TERM



0355384 - 0554504

FIG.20

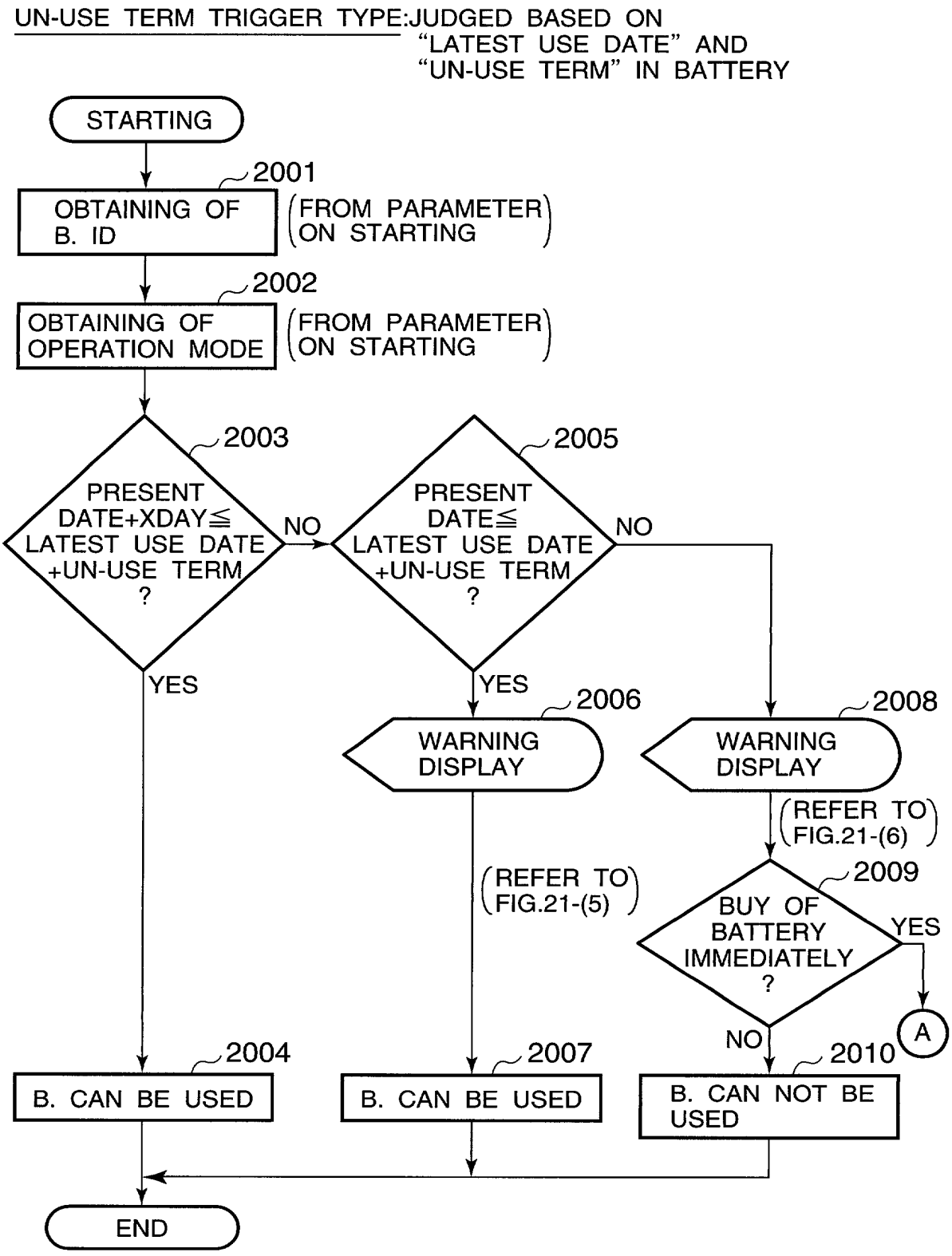
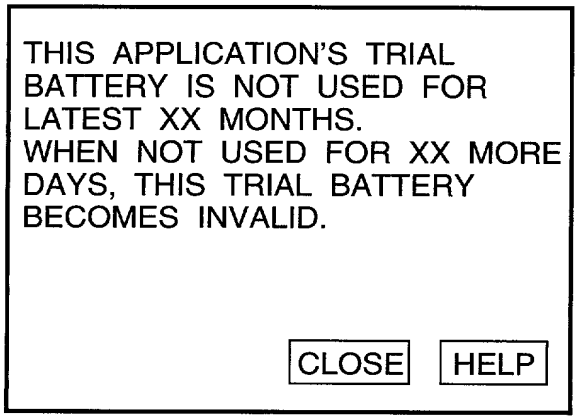
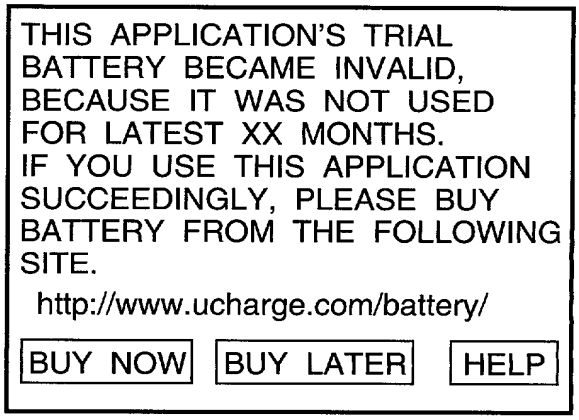

UN-USE TERM TRIGGER TYPE:JUDGED BASED ON "LATEST USE DATE" AND "UN-USE TERM" IN BATTERY
STARTING
2001
OBTAINING OF B. ID
(FROM PARAMETER ON STARTING)
2002
OBTAINING OF OPERATION MODE
(FROM PARAMETER ON STARTING)
2003
PRESENT DATE+XDAY≦ LATEST USE DATE +UN-USE TERM ?
NO
2005
PRESENT DATE≦ LATEST USE DATE +UN-USE TERM ?
NO
YES
YES
2006
WARNING DISPLAY
2008
WARNING DISPLAY
(REFER TO FIG.21-(6))
(REFER TO FIG.21-(5))
2009
BUY OF BATTERY IMMEDIATELY ?
YES
A
NO
2004
B. CAN BE USED
2007
B. CAN BE USED
2010
B. CAN NOT BE USED
END

FIG.21

(5)
DISPLAY OF WARNING MESSAGE FROM X DAYS BEFORE OF EXPIRY DATE OF SET UN-USE TERM TO EXPIRY DATE

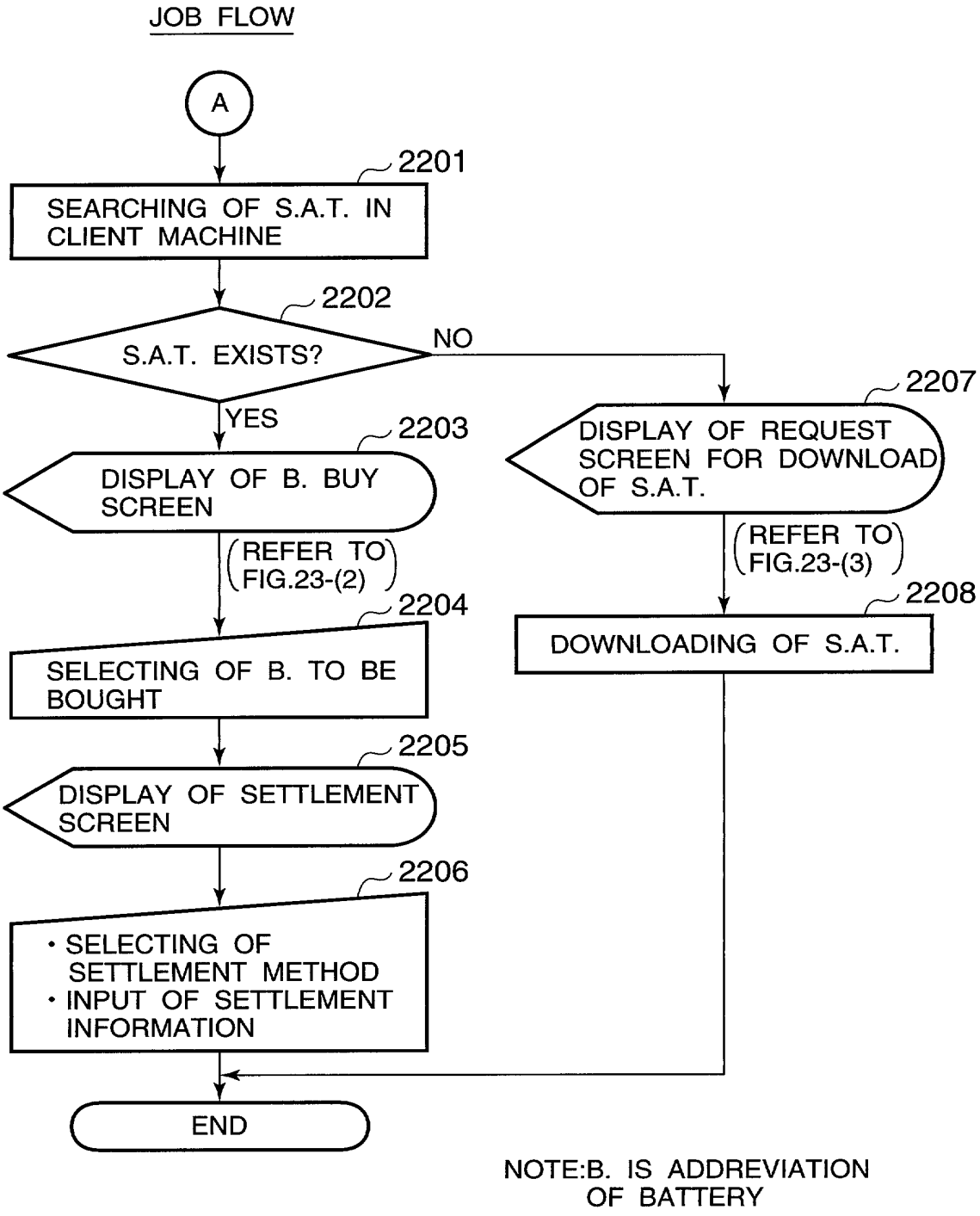


(6)
DISPLAY OF WARNING MESSAGE AFTER PROGRESS OF UN-USE TERM



EP 1 950 654 A1

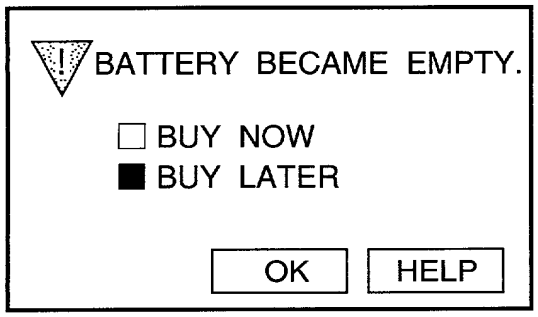
FIG.22



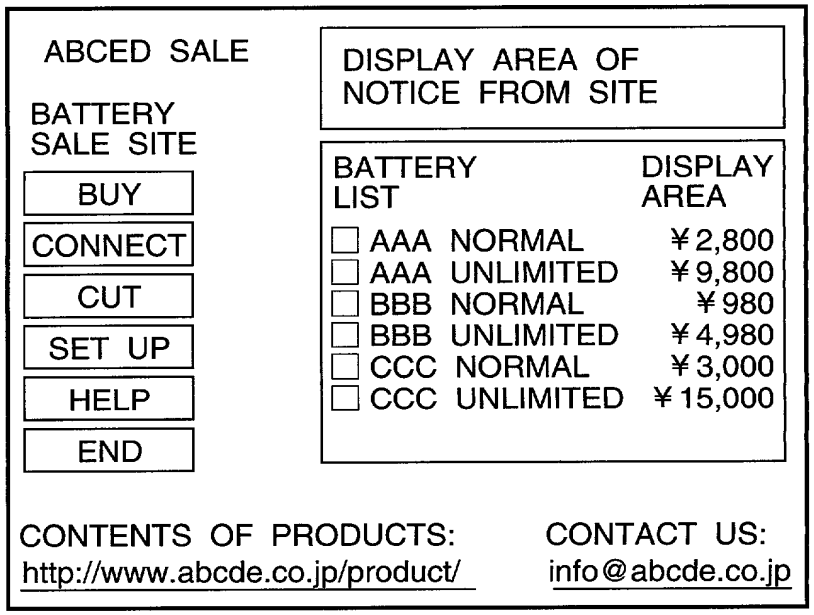
1-0054-0054-0054

FIG.23

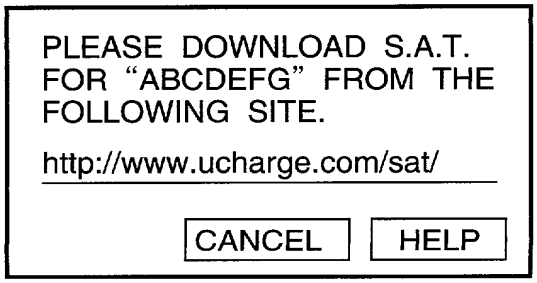
(1)
NOTICE SCREEN OF
BATTERY RESIDUAL
QUANTITY 0



(2)
S.A.T. SCREEN

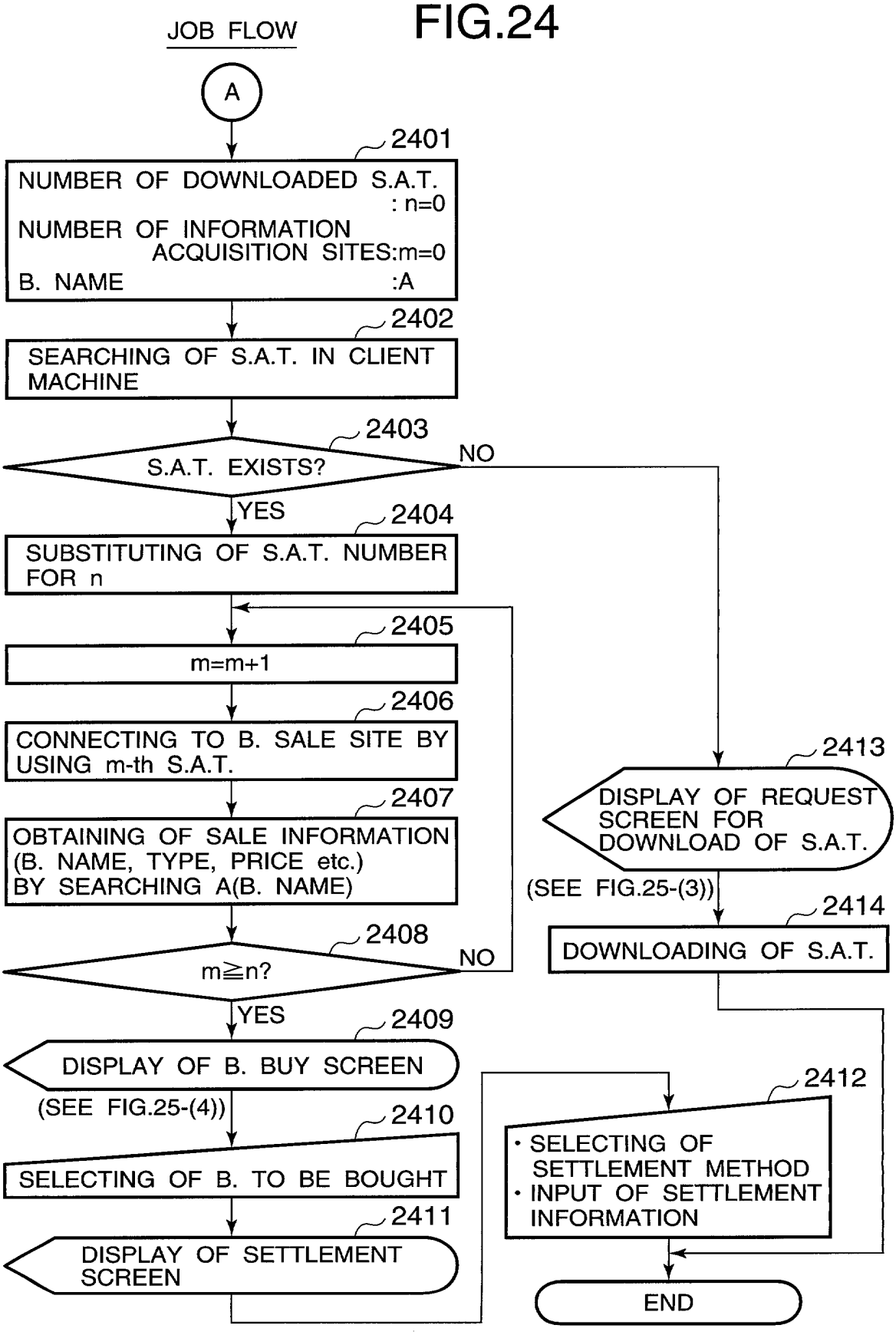


(3)
REQUEST SCREEN FOR DOWNLOAD
OF S.A.T.



EP 1 505 548 A1

FIG.24



JP2001-005568A

FIG.25

UI(USER INTERFACE)

(4)

BATTERY BUY SCREEN
LISTING OF BUY TARGET BATTERY'S INFORMATION SEARCHED BY ALL S.A.T. IN CLIENT MACHINE

BATTERY NAME:ABCDEFG

SALE SITE	TYPE	PRICE
YYY	NORMAL	¥5,000
PPP	NORMAL	¥4,800
PPP	UNLIMITED	¥9,800

BUY | CANCEL | HELP

(3)

S.A.T. DOWNLOAD REQUEST SCREEN

PLEASE DOWNLOAD S.A.T. FOR "ABCDEFG" FROM THE FOLLOWING SITE.

http://www.ucharge.com/sat/

CANCEL | HELP

Document ID: US 2002/0095360 A1

(1) PREPAID TYPE

FIG.26

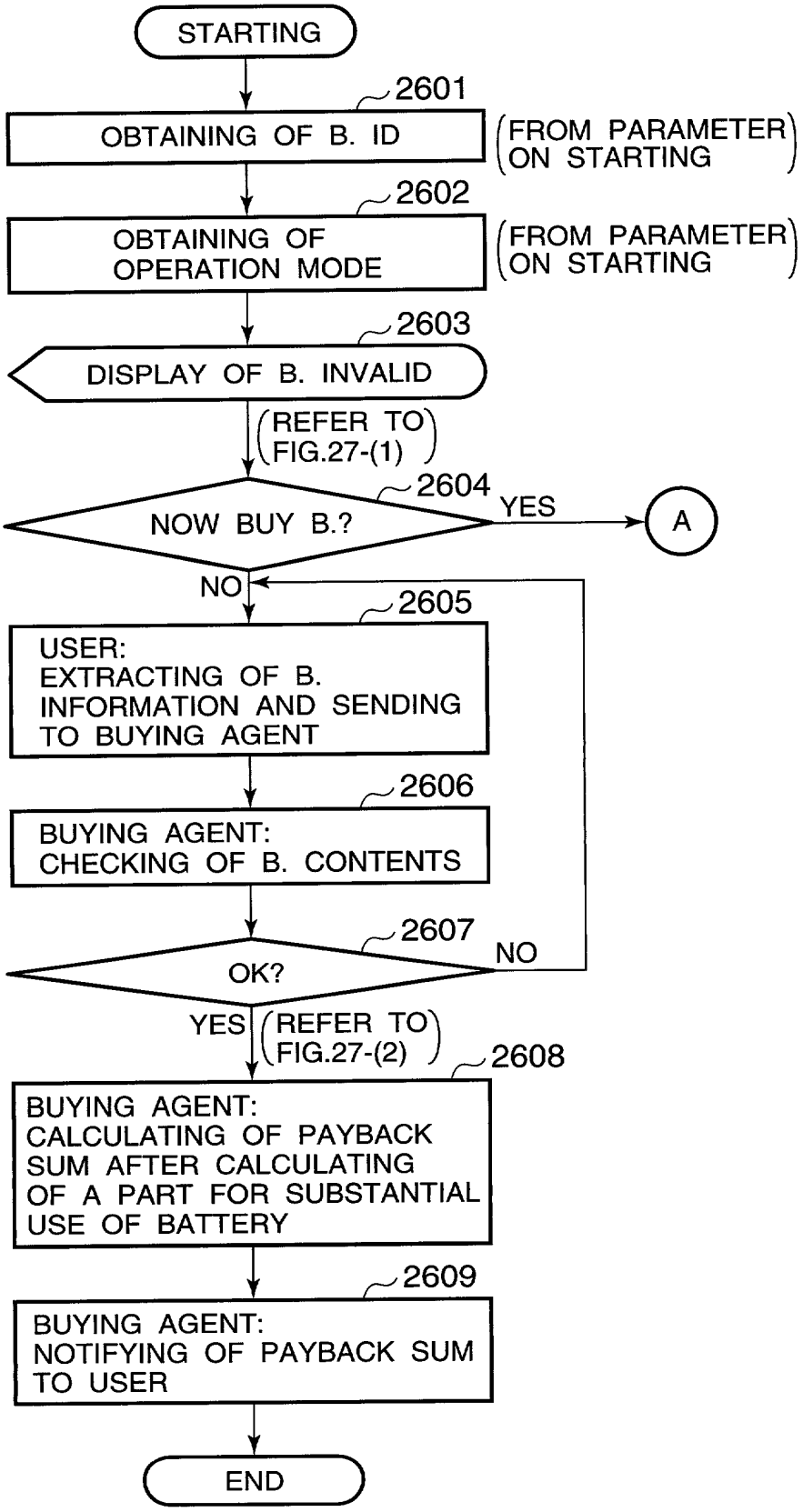
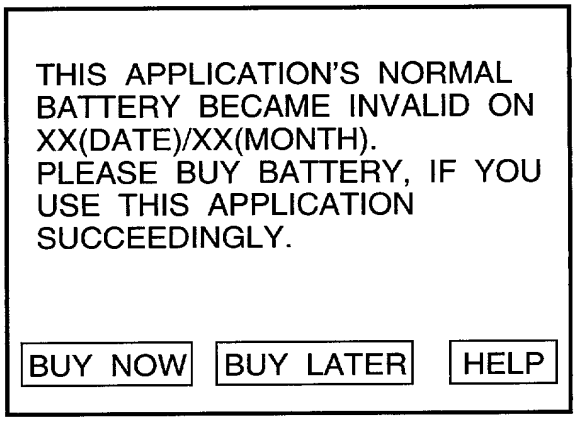
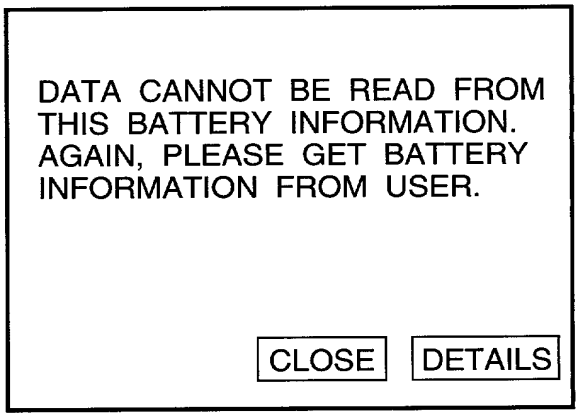


FIG.27

(1)
DISPLAY OF MESSAGE FOR NOTIFYING NORMAL BATTERY INVALID

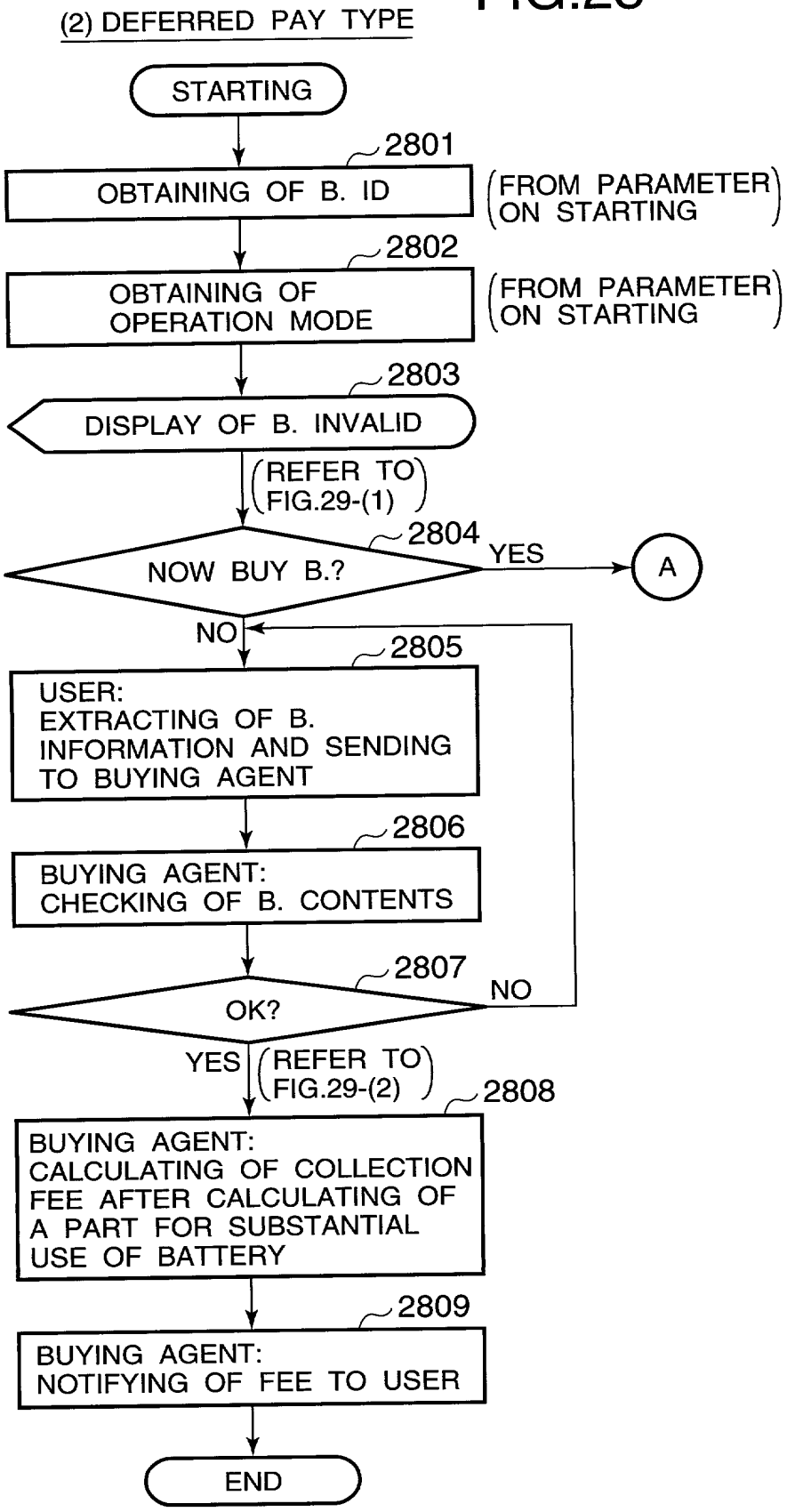


(2)
- IN CASE THAT ABNORMALITY IS DISCOVERED IN CONTENTS BY CHECKING OF B. INFORMATION, WARNING MESSAGE IS DISPLAYED TO BUYING AGENT'S MACHINE
- ERROR CODE IS DISPLAYED BY CLICKING OF DETAILS



0 0 5 3 6 8 4 - 0 5 4 5 0 4

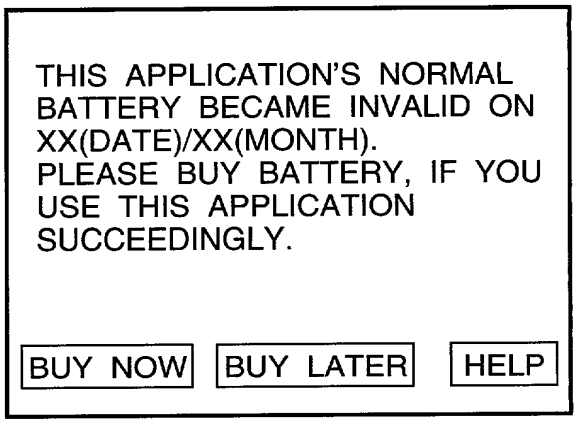
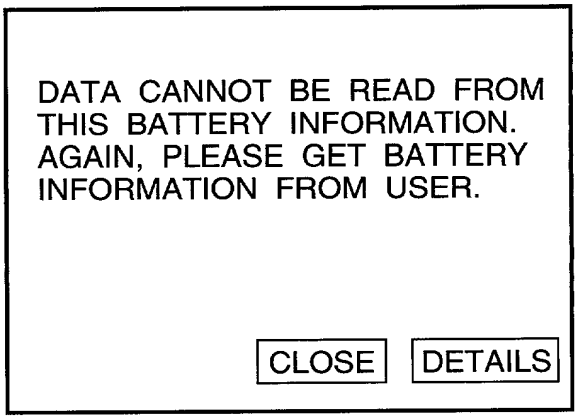
FIG.28



EP 0 954 148 A2

FIG.29

(1)
DISPLAY OF MESSAGE FOR NOTIFYING NORMAL BATTERY INVALID



(2)
- IN CASE THAT ABNORMALITY IS DISCOVERED IN CONTENTS BY CHECKING OF B. INFORMATION, WARNING MESSAGE IS DISPLAYED TO BUYING AGENT'S MACHINE
- ERROR CODE IS DISPLAYED BY CLICKING OF DETAILS